


HORIZONTAL MACHINING CENTER NHM 5000 MACHINE SPEC. SELECTION SHEET					
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1. GENERAL SPECIFICATION

2012.02.16

ITEM			UNIT	SPECIFICATION		SELECTION	
CAPACITY	PALLET SIZE		mm	500x500		DEFAULT	
	MAX. WORKPIECE SIZE	DIAMETER	mm	850			
		HEIGHT	mm	1100			
	MAX. WORKPIECE WEIGHT		kg	800			
	SPINDLE NOSE TO TABLE CENTER		mm	100 ~ 950			
	SPINDLE CENTER TO PALLET TOP		mm	75 ~ 775			
MAIN DIMENSION		LENGTH	mm	6840		STD.	
		WIDTH	mm	3670			
		HEIGHT	mm	3330			
MACHINE WEIGHT(NET) ⁽¹⁾			kg	18500		DEFAULT	
UTILITY	CONTROL POWER	VOLT/FREQUENCY	V/Hz	200/50			
				220/60			
				380/50,60			
				400/50,60			
				415/50,60			
				440/50,60			
	PHASE	PH	3				
REQUIRED POWER CAPACITY ⁽²⁾			kVA	50	60, 70		
COMPRESSED AIR	PRESSURE	MPa	0.54		DEFAULT		
	CONSUMPTION	NL/min	330				
MACHINE COLOR				DOOSAN 4 TONE COLOR MT DARK GRAY(5.3PB 3.0 / 0.4) MT MIDDLE GRAY(1.4RP 4.8 / 0.1) MT LIGHT GRAY(7.3B 7.8 / 0.4) MT BLUE(6.1PB 5.9 / 7.6)		STD.	SELECTIVE
				USER DEFINED		OPT.	
CNC CONTROL			MODEL	FANUC 31i-B		DEFAULT	

(1) SPECIFIED WEIGHT IS BASED ON THE MACHINE WITH EXPORT STADARD SPECIFICATION AND INCLUDING STANDARD ACCESSORIES AND EQUIPMENTS

(2) IF SPINDLE MOTOR IS a15/7000i, THE REQUIRED POWER CAPACITY IS 50KVA. IF SPINDLE MOTOR IS a22/7000i, THE REQUIRED POWER CAPACITY IS 60KVA.
IF SPINDLE MOTOR IS a30/6000i, THE REQUIRED POWER CAPACITY IS 70KVA.

2. SPINDLE HEAD

ITEM			UNIT	SPECIFICATION	SELECTION	
MOTOR	TYPE			α15/7000i	STD.	SELECTIVE
	POWER(CONT./SHORT)	kW		15/18.5(30min)		
	MAX. SPINDLE SPEED	r/min		6000		
	BASIC SPEED	r/min		231		
	MAX. TORQUE(SHORT TERM)	N·m		954(S3 25%)	OPT.	
	TYPE			α22/7000i		
	POWER(CONT./SHORT)	kW		22/35(S3 10%)		
	MAX. SPINDLE SPEED	r/min		6000		
	BASIC SPEED	r/min		192		
	MAX. TORQUE(SHORT TERM)	N·m		1732(S3 10%)	OPT.	
	TYPE			α30/6000i		
	POWER(CONT./SHORT)	kW		30/37(30min)		
	MAX. SPINDLE SPEED	r/min		6000		
	BASIC SPEED	r/min		177		
	MAX. TORQUE(SHORT TERM)	N·m		1991(30min)	OPT.	
	TYPE			α22/10000i		
POWER(CONT./SHORT)	kW		22/35(S3 15%)			
MAX. SPINDLE SPEED	r/min		8000			
BASIC SPEED	r/min		231			
MAX. TORQUE(SHORT TERM)	N·m		1444(S3 15%)			

Specifications are subject to change without prior notice.

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2. SPINDLE HEAD (CONTINUED)

ITEM		UNIT	SPECIFICATION	SELECTION
SPINDLE TOOL CLAMPING FORCE		kN	27	DEFAULT
ORIENTATION			POSITION CODER	
TAPER TYPE			ISO #50, 7/24 TAPER	
POWER TRANSMISSION			2-STEPS GEAR DRIVEN	
SPINDLE COOLING	TANK CAPACITY	L	40.0	
	CAPACITY	Kcal/h	2992	

3. TABLE

ITEM			UNIT	SPECIFICATION	SELECTION	
1'INDEX	POSITIONING ACCURACY		deg.	±3"	STD.	SELECTIVE
	REPEATABILITY ACCURACY		deg.	±1"		
	MAX. ROTATING SPEED		r/min	15		
	TABLE INDEXING TIME	90'	s	1.7		
		180'	s	2.5		
		360'	s	4		
	CLAMPING FORCE ⁽¹⁾		kN	72.0		
0.001' ROTARY (DOOSAN)	POSITIONING ACCURACY		deg.	±6"	OPT.	
	REPEATABILITY ACCURACY		deg.	±4"		
	MAX. ROTATING SPEED		r/min	16		
	CLAMPING TORQUE ⁽¹⁾		N·m	6085		

(1) ACCORDING TO CUTTING PLACE OF WORKPIECE(HEIGHT DIRECTION) MAX. CUTTING CAPACITY CAN BE DIFFERENT.

4. AXES SYSTEM

ITEM			UNIT	SPECIFICATION		SELECTION	
STROKE	X AXIS		mm	800		DEFAULT	
	Y AXIS		mm	700			
	Z AXIS		mm	850			
RAPID TRAVERSE	X AXIS		m/min	30	36 ⁽¹⁾	STD.	OPT.
	Y AXIS		m/min	30	36 ⁽¹⁾		
	Z AXIS		m/min	30	36 ⁽¹⁾		
ACCELERATION / DECELERATION TIME	X AXIS		msec	200		STD.	
	Y AXIS		msec	200			
	Z AXIS		msec	200			
MAX. CUTTING FEEDRATE	X AXIS		mm/min	15000	18000	STD.	OPT.
MAX. AXIAL THRUST FORCE(CONTINUOUS/INTERMITTENT)	Z AXIS		kN	13.8/40.2	15.7/43.4		
BALL SCREW(DIAMETER x LEAD)	X AXIS		mm	50x10	50x12		
	Y AXIS		mm	50x10	50x12		
	Z AXIS		mm	50x10	50x12		
ACCURACY	POSITIONING		mm	±0.005/FULL STROKE		DEFAULT	
	REPEATABILITY		mm	±0.002			
DRIVE MOTOR TYPE ⁽²⁾	X AXIS			α30/3000i	α40/3000i	STD.	OPT.
	Y AXIS			α30B/3000i	α40B/3000i		
	Z AXIS			α22/3000i	α30/3000i		
	B AXIS		INDEX	α8/3000i		STD.	SELECTIVE
			ROTARY	α12/4000is		OPT.	
DRIVE MOTOR POWER (STALL TORQUE) ⁽¹⁾	X AXIS			7.0kW (30N.m)	6.0kW (38N.m)	STD.	OPT.
	Y AXIS			7.0kW (30N.m)	6.0kW (38N.m)		
	Z AXIS			4.0kW (22N.m)	7.0kW (30N.m)		
	B AXIS		INDEX	1.6kW (8N.m)		STD.	SELECTIVE
			ROTARY	2.7kW (12N.m)		OPT.	
FEEDBACK SYSTEM	ABSOLUTE PULSE CODER			X,Y,Z,B		DEFAULT	
	LINEAR SCALE	X AXIS				OPT.	SELECTIVE
		Y AXIS				OPT.	
		Z AXIS				OPT.	

(1) IF RAPID TRAVERSE 36m/min IS SELECTED AS OPTION, LEAD OF BALL-SCREW AND DRIVEN MOTOR TYPE MUST BE SELECTED OPTION SECIFICATION SIMULTANEOUSLY.

(2) THIS VALUE IS BASED ON FANUC SERVO MOTOR.

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5. ATC & MAGAZINE

ITEM		UNIT	SPECIFICATION		SELECTION	
TOOL SHANK	PULL STUD		MAS403 BT 50	MAS403 P50T-1(45°)	STD.	SELECTIVE
			CAT 50	MODIFIED CAT(BT SHAPE)	OPT.	
			DIN 69871-A45	DIN 69872 #50	OPT.	
			ISO 12164-1HSK-A100	-	OPT.	
TOOL STORAGE CAPACITY		ea	60		STD.	SELECTIVE
		ea	90		OPT.	
		ea	120		OPT.	
		ea	150		OPT.	
		ea	196 (MATRIX)		OPT.	
		ea	256 (MATRIX)		OPT.	
		ea	316 (MATRIX)		OPT.	
		ea	376 (MATRIX)		OPT.	
TOOL SELECT TYPE			FIXED ADDRESS		DEFAULT	
MAX. TOOL DIAMETER		mm	130 (CONTINUOUS.), 320 (ADJACENT POTS EMPTY)			
MAX. TOOL LENGTH		mm	530	600 (HSK)	STD.	OPT.
MAX. TOOL WEIGHT		kg	30			
MAX. TOOL MOMENT		N·m	34.3			
T-T TIME		s	2.0 (Heavy tool : 3.5)			
C-T-C TIME		s	7.0 (Heavy tool : 8.5)			

6. APC

ITEM				UNIT	SPECIFICATION	SELECTION	
PALLET SURFACE	TAP PALLET				24-M16xP2.0	STD.	SELECTIVE
	T-SLOT PALLET				5- 18H8	OPT.	
PALLET ROTATION IN SETUP STATION					MANUALLY 90°	DEFAULT	
TWIN PALLET	NUMBER OF PALLET			ea	2		
	MIN. PALLET CHANGE TIME			s	8.5		
	MAX. WORKPIECE SIZE ⁽¹⁾	HYD. FIXTURE LINE NONE		mm	Ø850 x 1100h		
		HYD. FIXTURE LINE 2 PORT		mm	Ø850 x 1000h		
		HYD. FIXTURE LINE 4 PORT		mm	Ø850 x 970h		
		HYD. FIXTURE LINE 6 PORT		mm	Ø850 x 940h		
		HYD. FIXTURE LINE 8 PORT		mm	Ø850 x 910h		
	MAX. WORKPIECE WEIGHT			kg	800		
PALLET CHANGE TYPE				ROTARY SHUTTLES			
7-MULTI PALLET STATION	NUMBER OF PALLET			ea	7	OPT.	SELECTIVE
	MAX. WORKPIECE SIZE			mm	Ø800 x 1100h		
	MAX. WORKPIECE WEIGHT			kg	800		
	MAGAZINE TYPE				BUFFER STATION TYPE with CARRIER		
	OPERATION				SCHEDULED OPERATION		
	PALLET DRIVE DEVICE				SERVO MOTOR & REDUCTION GEAR		
	HYDRAULIC POWER UNIT			kW	2.2		
9-MULTI PALLET STATION	NUMBER OF PALLET			ea	9	OPT.	
	MAX. WORKPIECE SIZE			mm	Ø800 x 1100h		
	MAX. WORKPIECE WEIGHT			kg	800		
	MAGAZINE TYPE				BUFFER STATION TYPE with CARRIER		
	OPERATION				SCHEDULED OPERATION		
	PALLET DRIVE DEVICE				SERVO MOTOR & REDUCTION GEAR		
	HYDRAULIC POWER UNIT			kW	2.2		
LPS (LINEAR PALLET SYSTEM) ^(NOTE.3)	NUMBER OF PALLET			ea	10	OPT.	
	MAX. WORKPIECE SIZE			mm	Ø850 x 1100h		
	MAX. WORKPIECE WEIGHT			kg	800		
	MAGAZINE TYPE				BUFFER STATION TYPE with STACKER CRANE		
	OPERATION				SCHEDULED OPERATION		
	PALLET DRIVE DEVICE				SERVO MOTOR & REDUCTION GEAR		

(1) THIS MAX. WORKPIECE SIZE DEPEND ON THE NUMBER OF PORT ON HYD. FIXTURE LINE.

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7. LUBRICATION & HYDRAULIC SYSTEM

ITEM		UNIT	SPECIFICATION	SELECTION
LUBRICATION	TANK CAPACITY(AVAILABLE)	L	7.2	DEFAULT
	PUMP MOTOR POWER	kW	0.057	
	DISCHARGE PRESSURE	MPa	1.7	
HYDRAULIC SYSTEM	TANK CAPACITY	L	55	
	MOTOR CAPACITY	kW	3.7	
	OPERATING PRESSURE	MPa	6.0	

8. COOLANT SYSTEM

ITEM		UNIT	SPECIFICATION	SELECTION		
FLOOD COOLANT	TANK CAPACITY	L	825	DEFAULT		
	PUMP MOTOR POWER	kW	1.5			
	FILTRATION	mesh	10(TANK SCREEN FILTER)			
	MAX. PRESSURE	MPa	0.68(60Hz)/0.49(50Hz)			
	MAX. FLOWRATE	L/min	30			
MACHINE FLUSHING	TANK CAPACITY	L	STD. TANK COMMON			
COOLANT	PUMP MOTOR POWER	kW	1.5			
	FILTRATION	mesh	10(TANK SCREEN FILTER)			
	MAX. PRESSURE	MPa	0.29(60Hz)/0.19(50Hz)			
	MAX. FLOWRATE	L/min	100			
	COOLANT SYSTEM 1.91 MPa TSC I	PUMP MOTOR POWER	kW	1.5	OPT.	SELECTIVE
FILTRATION		μm	20~30(CYCLONE TYPE)			
MAX. PRESSURE UNDER BLOCKING		MPa	1.91			
MAX. FLOWRATE WITHOUT TOOL		L/min	20(60Hz)/16.6(50Hz)			
COOLANT SYSTEM 2.94 MPa TSC		PUMP MOTOR POWER	kW	3.0	OPT.	
	FILTRATION	μm	20~30(CYCLONE TYPE)			
	MAX. PRESSURE UNDER BLOCKING	MPa	2.94			
	MAX. FLOWRATE WITHOUT TOOL	L/min	20(60Hz)/16.6(50Hz)			
	COOLANT SYSTEM 6.86 MPa TSC I	PUMP MOTOR POWER	kW	7.5	OPT.	
FILTRATION		μm	20~30(CYCLONE TYPE)			
MAX. PRESSURE UNDER BLOCKING		MPa	6.86			
MAX. FLOWRATE WITHOUT TOOL		L/min	30(60Hz)/25(50Hz)			
SHOWER COOLANT		PUMP MOTOR POWER	kW	1.5	OPT.	
	FILTRATION	mesh	10(TANK SCREEN FILTER)			
	MAX. PRESSURE	MPa	0.68(60Hz)/0.49(50Hz)			
	MAX. FLOWRATE	L/min	100			
	COOLANT GUN ⁽²⁾	PUMP MOTOR POWER	kW	0.4	OPT.	SELECTIVE
FILTRATION		mesh	10(TANK SCREEN FILTER)			
MAX. PRESSURE		MPa	0.15(60Hz)/0.11(50Hz)			
MAX. FLOWRATE		L/min	40			
OIL SKIMMER		TYPE		SUS-BELT	DEFAULT	

(1) THERE ARE COOLANT PIPING INSIDE OF THE MACHINE & ROTATING UNION ON THE SPINDLE HEAD FOR TSC READY.

(2) THIS DEVICE IS OPEARATED BY APC SET-UP DOOR

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9. CHIP CONVEYOR & BUCKET

ITEM		UNIT	SPECIFICATION	SELECTION	
CONVEYOR	HINGED PLATE TYPE CONVEYOR	SET		OPT.	SELECTIVE
	MAGNETIC SCRAPER TYPE CONVEYOR	SET		OPT.	
	2 STEP DRUM CHIP CONVEYOR	SET		OPT.	
BUCKET	CAPACITY	L	380	OPT.	SELECTIVE

10. COOLING FOR ELECTRIC CABINET

ITEM		UNIT	SPECIFICATION	SELECTION	
AIR CONDITIONER				OPT.	SELECTIVE

11. ACCESSORIES

ITEM		UNIT	SPECIFICATION	SELECTION	
WORK LIGHT		SET	1-FLUORESCENT LAMP	DEFAULT	
OPERATOR CALL LAMP		SET	3-COLOR SIGNAL TOWER		
INSTALLATION PARTS		SET	1		
SPARE PARTS(FUSES & ETC.)		SET	1		
ASSEMBLY & OPERATION TOOLS		SET	1		
AUTO TOOL LENGTH MEASUREMENT	MAKER/SPEC.	SET	RENISHAW/TS27R ⁽¹⁾	OPT.	SELECTIVE
AUTO TOOL BREAKAGE DETECTION	MAKER/SPEC.	SET	OMRON/D5A ⁽¹⁾	OPT.	
	MAKER/SPEC.	SET	NEEDLE ^(NOTE-3)	OPT.	
AUTO WORKPIECE MEASUREMENT	MAKER/SPEC.	SET	RENISHAW/OMP60	OPT.	SELECTIVE
5TH AXIS PREPARATION		SET	USER DEFINED	OPT.	SELECTIVE
AIR GUN		SET	-	OPT.	SELECTIVE

(1) THIS DEVICE IS UP & DOWN MOVING TYPE.

< NOTE >

- SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.
- ALL SPECIFIED VALUES ARE GIVEN AT STANDARD ELECTRIC POWER CONDITIONS.(60Hz,220V)
- PLEASE INQUIRE DOOSAN INFRACORE R&D DEPARTMENT WHEN END-USER SELECT * MARKS NECESSARILY
- MACHINE DIMENSION AND WEIGHT ARE CHANGED ACCORDING TO OPTIONAL SPECIFICATION.
- PLEASE REFER TO LAY-OUT AND FOUNDATION DRAWING IN RELATION TO INSTALLATION/ELECTRIC DEVICE.
- ALL SPECIFIED VALUES OF PRESSURE AND FLOW RATE OF COOLANT AND HYDRAULIC PUMP ARE GIVEN AT PUMP OUTLET.
- THE FLOWRATE AND THE PRESSURE OF COOLANT ARE GIVEN AT THE CONDITION OF USING WATER SOLUBLE COOLANT.
- SINCE PRESSURE AND FLOWRATE OF T-S-C HAVE INFLUENCE ON TOOL LIFE AND CUTTING CAPABILITY, TYPE OF T-S-C SHOULD BE SELECTED WITH PRUDENCE.
FOR DETAIL SPECIFICATION ABOUT T-S-C, REFER TO CHAPTER II -12-B OF MACHINING CENTER SALES GUIDES.
- REFER TO THE SEPARATED SPEC. SHEETS IN RELATION TO SPECIFICATION, FUNCTION AND OPTION OF CNC CONTROLLER.